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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,863	01/03/2007	Jacobus Noordermeer	BHD-5256-7	4613

23117 7590 02/25/2009
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EXAMINER

KAUCHER, MARK S

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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02/25/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,863	Applicant(s) NOORDERMEER ET AL.	
	Examiner MARK S. KAUCHER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/03/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: The phrase “performed at elevated temperature” in the third line should be changed to “performed at an elevated temperature”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 1 is indefinite because elevated temperature (a relative term of degree) is not defined in the specification or the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being obvious over Duncan (US 4,143,099) in view of Verlaan et al. (US 4,855,482) and The American Heritage Dictionary.

8. As to claims 1, 2 and 7-10, Duncan teaches a thermoplastic elastomeric (TPV) comprising mixing a polyolefin (polypropylene, see col. 3, line 49 and examples) and a rubber (EPDM, col. 3, lines 31-35 and examples) with a peroxide (see col. 2, lines 18-25) at elevated temperatures (such as 160 °C, see col. 3, lines 46-61). See abstract for an overview. Note: for the purpose of this examination, the dictionary definition of an increase in temperature is applied. See The American Heritage Dictionary.

Duncan is silent on the vinyl containing peroxide mentioned in the instant claims. However, Duncan discloses that it may be difficult and/or dangerous to use peroxides with low stability at high temperatures and that higher stability peroxides at high temperatures are preferred. See col. 2, lines 26-27.

Verlaan et al. teaches the use of triazine peroxide having allyl groups such as 2-t-butylperoxy-4,6-diallyloxy-1,3,5-triazine (referred to in the instant application as 2,4-Diallyloxy-6-tert-butylperoxy- 1,3,5-triazine or DTBT). See abstract and example 1. The peroxides are especially useful for crosslinking EPDM. See abstract and col.3, lines 47-64. The peroxides are advantageous at higher temperatures, so the “peroxides may with advantage be used in high-melting polymers, such as elastomers, without the risk of premature cross-linking during the processing phase.” See col. 3, lines 47-50.

It would have been obvious to one with ordinary skill in the art at the time the invention was made by modifying the peroxide of Duncan with DTBT mentioned in Verlaan et al. because one would want to use a peroxide that is suitable for high melting polymers, so premature cross-linking does not occur See col. 3, lines 47-50.

Furthermore, case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045).

9. As to claims 3-5, Verlaan et al. teaches the use of DTBT as a peroxide useful in the vulcanization. See above, abstract and example 1. The relative solubility of DTBT is at least 1.2 and at least equal to the solubility-parameter of the rubber as disclosed in applicant's specification. See paragraphs 21-24 of applicant's specification. In certain circumstances, references cited to show a universal fact need not be available as prior art before applicant's filing date. **In re Wilson**, 311 F.2d 266, 135 USPQ 442 (CCPA

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1962). Such facts include the characteristics and properties of a material or a scientific truism. See MPEP § 2124.

10. As to claim 6 and 11, Duncan discloses dynamic vulcanization (crosslinking). See col. 3, line 62 through col. 4, line 15 and examples.

11. As to claims 12 and 13, Duncan is silent on the crosslink density of the rubber in the TPV, determined as a gel content in boiling xylene is at least 95%. However, as noted above, the method of Duncan in view of Verlaan et al. is identical to the presently claimed, and identical methods must yield products with identical properties.

Accordingly, the properties of instant claims 12 and 13 are assumed to be inherent to the method of Duncan in view of Verlaan et al. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show other wise. **In re Best**, 562 F. 2d 1252, 195 USPQ 430 (CCPA 1977); **In re Fitzgerald**, 205 USPQ 594 (CCPA 1980).

12. As to claim 14, Duncan discloses that the peroxide is used in 1 wt%. See example 8.

Additionally, Verlaan et al. discloses the use of the peroxide in an amount of 1-3 wt%. See col. 4, line 12.

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13. As to claims 15 and 16, Duncan discloses that articles can be prepared by the method described above. See col. 4, lines 27-28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK S. KAUCHER whose telephone number is (571) 270-7340. The examiner can normally be reached on Monday to Thursday, 8:00 AM to 7:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/MARK S KAUCHER/

Examiner, Art Unit 1796

/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1796